supplied to the core, the method comprising the steps of:

raising a coolant surface formed between the coolant and a vapor in the at least one water rod by increasing the flow rate of the coolant supplied to the core based on increasing a number of revolutions of the pump during one period from a beginning of one fuel cycle, which one fuel cycle is an operation period of the nuclear reactor from when fuel assemblies in the nuclear reactor are replaced and operation of the nuclear reactor is started to when the nuclear reactor is stopped for renewing at least one of the fuel assemblies in the nuclear reactor, and before an end of the one fuel cycle; and

further increasing the flow rate of coolant supplied to the core based on increasing the number of revolutions of the pump during another period after the one period to an end of the one fuel cycle in a state in which the at least one water rod is completely filled with the coolant.

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52. (thrice amended) A method for operating a nuclear reactor having a reactor vessel and at least one fuel assembly loaded in a core arranged inside the reactor vessel, the at least one fuel assembly having an upper tie plate, a lower tie plate, a plurality of fuel rods having upper end portions held by the upper tie plate and lower end portions held by a fuel rod holding portion of the lower tie plate, at least one water

rod arranged among the fuel rods, and a resistance member at a lower end portion of the at least one fuel assembly, the plurality of fuel rods having a plurality of fuel pellets therein, and the at least one water rod having a coolant ascending path including a coolant inlet port which is open in a region lower than the resistance member, and a coolant descending path which is communicated with the coolant ascending path, the coolant descending path having a coolant delivery port open in a region higher than the resistance member, the coolant being guided downwardly in the coolant descending path in an opposite direction of the coolant flow in the coolant ascending path, the method comprising the step of regulating a flow rate of the coolant supplied to the core by a pump including the steps of:

raising a coolant surface formed between the coolant and a vapor in the at least one water rod by increasing the flow rate of the coolant supplied to the core based on increasing a number of revolutions of the pump during one period from a beginning of one fuel cycle, which one fuel cycle is an operation period of the nuclear reactor from when fuel assemblies in the nuclear reactor are replaced and operation of the nuclear reactor is started to when the nuclear reactor is stopped for renewing at least one of the fuel assemblies in the nuclear reactor, and before an end of the one fuel cycle; and

further increasing the flow rate of the coolant supplied to the core based on increasing the number of revolutions of the pump during another period after the one period to an end of the one fuel cycle in a state in which the at least one water rod is completely filled with the coolant and no vapor is present in the at the another period.

56. (thrice amended) A method according to 54, wherein the step of controlling the amount of voids includes the step of regulating a flow rate of coolant supplied to the core including the steps of:

raising a coolant surface formed between the coolant and a vapor in the water rods by increasing the flow rate of the coolant supplied to the core based on increasing the number of revolutions of the pump during one period from a beginning of one fuel cycle, which one fuel cycle is an operation period of the nuclear reactor from when fuel assemblies in the nuclear reactor are replaced and operation of the nuclear reactor is started to when the nuclear reactor is stopped for renewing at least one of the fuel assemblies <u>in the nuclear reactor</u>, and before an end of the one fuel cycle; and

further increasing the flow rate of the coolant supplied to the core based on increasing the number of revolutions of the pump during the another period in a state in which the water rods are completely filled with the coolant and no vapor

is present in the water rods at the another period.

Please add the following new claims:

--61. A method for operating a nuclear reactor having a reactor vessel, a plurality of fuel assemblies loaded in a core arranged inside the reactor vessel, wherein each of said plurality of fuel assemblies includes a plurality of fuel rods and at least one water rod therein, and a pump which regulates a flow rate of coolant supplied to the core, the method comprising the steps of:

raising a coolant surface formed between the coolant and a vapor in the at least one water rod by increasing the flow rate of the coolant supplied to the core based on increasing a number of revolutions of the pump during one period from a beginning of one fuel cycle, which one fuel cycle is an operation period of the nuclear reactor from when fuel assemblies in the nuclear reactor are replaced and operation of the nuclear reactor is started to when the nuclear reactor is stopped for renewing a portion of the fuel assemblies in the nuclear reactor, and before an end of the one fuel cycle; and

further increasing the flow rate of coolant supplied to the core based on increasing the number of revolutions of the pump during another period after the one period to an end of the one fuel cycle in a state in which the at least one water

rod is completely filled with the coolant.

62. A method for operating a nuclear reactor having a reactor vessel and at least one fuel assembly loaded in a core arranged inside the reactor vessel, the at least one fuel assembly having an upper tie plate, a lower tie plate, a plurality of fuel rods having upper end portions held by the upper tie plate and lower end portions held by a fuel rod holding portion of the lower tie plate, at least one water rod arranged among the fuel rods, and a resistance member at a lower end portion of the at least one fuel assembly, the plurality of fuel rods having a plurality of fuel pellets therein, and the at least one water rod having a coolant ascending path including a coolant inlet port which is open in a region lower than the resistance member, and a coolant descending path which is communicated with the coolant ascending path, the coolant descending path having a coolant delivery port open in a region higher than the resistance member, the coolant being guided downwardly in the coolant descending path in an opposite direction of the coolant flow in the coolant ascending path, the method comprising the step of regulating a flow rate of the coolant supplied to the core by a pump including the steps of:

raising a coolant surface formed between the coolant and a vapor in the at least one water rod by increasing the flow

rate of the coolant supplied to the core based on increasing a number of revolutions of the pump during one period from a beginning of one fuel cycle, which one fuel cycle is an operation period of the nuclear reactor from when fuel assemblies in the nuclear reactor are replaced and operation of the nuclear reactor is started to when the nuclear reactor is stopped for renewing a portion of the fuel assemblies in the nuclear reactor, and before an end of the one fuel cycle; and

further increasing the flow rate of the coolant supplied to the core based on increasing the number of revolutions of the pump during another period after the one period to an end of the one fuel cycle in a state in which the at least one water rod is completely filled with the coolant and no vapor is present in the at the another period.

63. A method according to 62, wherein the step of controlling the amount of voids includes the step of regulating a flow rate of coolant supplied to the core including the steps of:

raising a coolant surface formed between the coolant and a vapor in the water rods by increasing the flow rate of the coolant supplied to the core based on increasing the number of revolutions of the pump during one period from a beginning of one fuel cycle, which one fuel cycle is an operation period of